

WHAT IS CLAIMED IS:

1. A glass feeder comprising

(A) a floor, a pair of opposed side walls, a pair  
5 of opposed end walls, and a roof, which together define  
an enclosed chamber, inlet means in one end wall for  
receiving molten glass into the chamber, and outlet  
means in the other end wall floor for discharging  
molten glass from the chamber,

10 (B) at least one burner passing through each side  
wall into the chamber, each burner comprising first and  
second burner head means for combusting oxidant and  
fuel within said chamber, means for feeding fuel from  
15 outside the chamber through a first set of one or more  
openings in each of said first and second burner head  
means from within said burner head means into the  
chamber, and means for feeding oxidant from outside the  
chamber through a second set of one or more openings in  
20 each of said first and second burner head means from  
within said burner head means into the chamber so that  
said fuel and oxidant mix at said burner head means  
after passing therethrough and do not mix before  
passing therethrough,

wherein said first and second burner head means  
25 are oriented with respect to each other that combustion  
of fuel and oxidant fed therethrough produces flames at  
each burner head which extend in axially opposite  
directions, and wherein each burner is oriented such  
that said flames extend parallel to the side wall  
30 through which the burner passes and adjacent to said  
side wall and to the glass surface.

2. A glass feeder according to claim 1 wherein the first and second burner heads on each burner are coaxial.

5 3. A glass feeder according to claim 1 comprising at least two of said burners passing through each side wall.

4. A glass feeder according to claim 1  
10 wherein said oxidant comprises at least 90 vol.% oxygen.

5. A glass feeder according to claim 1 comprising burner head means wherein said second set of openings comprises two sets of openings, one set having  
15 a larger diameter than the other set, wherein the set that is on the side of said burner head closer to the center of the chamber have smaller diameter than the other set.

20 6. A glass feeder according to claim 1 wherein a projection extending into the chamber a distance equal to the width of the flame extends from the burner head means a distance along the side wall equal to the length of the flame.

25 7. A method for operating a glass feeder, comprising flowing molten glass through a glass feeder having a floor, opposing side walls, opposing end walls and a roof which together define a chamber through  
30 which the molten glass flows, providing at least one burner passing through each side wall into the chamber, each burner comprising first and second burner head

means for combusting oxidant and fuel within said chamber, means for feeding fuel from outside the chamber through a first set of one or more openings in each of said first and second burner head means from within said burner head means into the chamber, and means for feeding oxidant from outside the chamber through a second set of one or more openings in each of said first and second burner head means from within said burner head means into the chamber so that said fuel and oxidant mix at said burner head means after passing therethrough and do not mix before passing therethrough,

wherein said first and second burner head means are oriented with respect to each other that combustion of fuel and oxidant fed therethrough produces flames at each burner head which extend in axially opposite directions, and wherein each burner is oriented such that said flames extend parallel to the side wall through which the burner passes and adjacent to said side wall and to the glass surface, and

combusting fuel and oxidant at said burners to produce flames which extend along both side walls at the molten glass surface.

8. A method according to claim 7 wherein the first and second burner heads on each burner are coaxial.

9. A method according to claim 7 comprising at least two of said burners passing through each side wall.

10. A method according to claim 7 wherein said oxidant comprises at lest 90 vol.% oxygen.

11. A method according to claim 7 comprising  
5 burner head means wherein said second set of openings comprises two sets of openings, one set having a larger diameter than the other set, wherein the set that is on the side of said burner head closer to the center of the chamber have smaller diameter than the other set.

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12. A method according to claim 7 wherein a projection extending into the chamber a distance equal to the width of the flame extends from the burner head means a distance along the side wall equal to the  
15 length of the flame.